

Scott A. Brown, Professional Engineer

Evaluation reports are the opinion of the evaluation entity, based on the findings, and in no way constitute or imply approval by a local building authority. I, Scott A. Brown P.E. have reviewed the data submitted by Raynor Garage Doors and in my opinion, the product, material, system, or method of construction specifically identified in this report conforms to the requirements of the 8th Edition (2023) of the Florida Building Code, subject to the limitations in this report.

Report No.: 39-D

Submitted: 10/06/17

Revised: 08/12/19

Revised: 09/22/23

Revised: 10/16/24

Category: Exterior Doors

Submitted By:

Raynor Garage Doors
1101 East River Road
Dixon, IL 61021

Evaluation Entity:

Scott A. Brown P.E.
809 E. 2nd Street
Dixon, IL 61021

Evaluation Test Standards:

ANSI/DASMA 108-2012
ANSI/DASMA 108-2017
ANSI/DASMA 115-2012
ANSI/DASMA 115-2017
TAS 201-94
TAS 202-94
TAS 203-94

1. Product Trade Name

1.1 Pan Doors

1.1.1 BuildMark

1.1.2 TradeMark

1.2 Sandwich Doors

1.2.1 FlexFit 175

2. Scope of Evaluation

2.1 Structural: Transverse wind and impact/cyclic loads.

3. Uses

3.1 Raynor garage doors are used as garage doors with specified allowable transverse wind pressures.

4. Models

4.1.1 BuildMark also referred to as BuildMark S: Sections shall be pan style 2" thick roll formed from 26ga. (.017 min) hot dipped galvanized steel per ASTM A-525 and A-526. Each door section is wood grain textured with embossed panels and has tongue and-groove section joint.

4.1.2 TradeMark: Sections shall be pan style 2" thick roll formed from 24 ga. (.023 min) hot dipped galvanized steel per ASTM A-525 and A-526. Each door section is wood grain textured with embossed panels and has tongue and-groove section joint.

4.1.3 FlexFit 175: Sections are constructed with a 1-1/2" square fiberglass tube frame and an exterior pultruded fiberglass skin and a polyethylene interior skin. The area between the skins and tube frame is filled with expanded polystyrene foam insulation. Assembly bolts are 1/4" carriage bolts with 1/4" blind nuts. End stiles are held in place using 5/16" carriage bolts and 5/16" Whiz Nuts.

5. Reinforcing

5.1 General: Raynor garage doors sections listed in this report may be reinforced horizontally with roll-formed galvanized steel U-bars or Box Struts.

5.1.1 U-bar: Horizontal reinforcing U-shaped sections, 2-5/8" deep x 2" wide x 18 ga. (.049 inch minimum) galvanized steel, 80 KSI minimum tensile.

5.1.2 Box Struts: Horizontal reinforcing U-shaped sections, 4-1/2" deep x 5.04" wide x 20 ga. (0.035 inch minimum) galvanized steel, 80 KSI minimum tensile.

6. Installation

6.1 General: Raynor garage doors are to be installed in accordance with the manufacturer's published installation instructions, engineering drawings and this report. The manufacturer's published installation instructions and this report shall be strictly adhered to, and a copy of these instructions shall be available at all times on the job site during installation. The information within this report governs if there are any conflicts between the manufacturer's instructions and this report.

7. Allowable Wind Loads

7.1 General: The doors shown in Table 1 were tested to ANSI/DASMA 108 for static air pressure. Doors shown in Table 2 were tested to ANSI/DASMA 108 for static air pressure and ANSI/DASMA 115 for impact and cyclic loading. Doors shown in Table 3 were tested to TAS 202 for static air pressure and ANSI/DASMA 115, TAS 201 and TAS 203 for Impact and Cyclic loading.

Table 1

Door Model(s)	Maximum Door Width	Drawing Number	Design Loads		Large Missile Impact Resistant	Test Report Number	Test Date
FlexFit 175	9'-2"	P-2320-B	+41.6	-46.5	No	1666	6/30/15
	16'-2"		+16.1	-18.1		1668	7/10/15
BuildMark TradeMark	16'-0"	P-2370-A	+29.7	-33.1	No	1899	8/12/19
BuildMark TradeMark	18'-0"	P-2390-A	+26.4	-29.4	No	1774	7/10/17

Table 2

Door Model(s)	Maximum Door Width	Drawing Number	Design Loads		Large Missile Impact Resistant	Test Report Number	Test Date
BuildMark TradeMark	16'-0"	P-3331-B	+29.7	-33.1	Yes	1601 1602	7/9/13 7/12/13
BuildMark TradeMark	18'-0"	P-3333-C	+23.5	-26.2	Yes	1613 1614	8/14/13 8/15/13
FlexFit 175	10'-2"	P-3347-A	+35.0	-37.8	Yes	1776 1777	08/15/17 08/16/17
BuildMark TradeMark	9'-0"	P-3348-A	+36.6	-41.1	Yes	1892 1893	7/09/19 7/10/19
	16'-0"		+23.3	-28.0		1890 1891	6/14/19 6/27/19
BuildMark TradeMark	18'-0"	P-3349-A	+17.7	-19.7	Yes	1896 1897	7/23/19 7/24/19

Table 3

Door Model(s)	Maximum Door Width	Drawing Number	Design Loads		Large Missile Impact Resistant	Test Report Number	Test Date
BuildMark TradeMark	9'-0"	P-3321-B	+41.6	-47.1	Yes	1491 1492	3/23/11 3/24/11
	16'-0"		+29.7	-33.1		1489 1490	3/15/11 3/18/11

8. Substantiating Data

8.1 Test Reports: Testing for doors shown in Tables 1, 2 and 3 were done at Raynor Garage Doors test lab in Dixon Illinois which is accredited by ANSI National Accreditation Board (ANAB) at the time of testing, scope of accreditation can be found at www.anab.ansi.org. Testing was witnessed by an independent third-party Florida Registered Professional Engineer Scott A. Brown P.E. Test reports were prepared by the test lab and signed and sealed by the witnessing Florida P.E. See Tables 1, 2 and 3 for report numbers and test dates.

8.2 Engineering Drawings: Drawings were prepared by Raynor Garage Doors under the direction of Scott A. Brown P.E. and then reviewed, signed, sealed and dated by Scott A. Brown P.E. See Table 1, 2 and 3 for drawing numbers.

8.3 Calculations: Calculations on jamb attachment, the results are shown on drawings listed in this report. Calculations were used to establish load ratings for door widths not tested. Section bending was evaluated using the bending moment equation $M = w * L^2 / 8$ where “w” is wind load and “L” is door width. Also, total load on the door edge hardware was evaluated so that no load on a calculated door component exceeded the load of a tested door component.

9. Limitations

9.1 The doors shall be installed in accordance with the manufacturer’s published installation instructions in this report and the manufacturer’s published installation instructions, engineering drawings and this report.

9.2 The structural elements supporting the door track brackets shall be designed by a registered professional engineer for the wind loads shown on the drawings listed in this evaluation.

9.3 The doors shall not be installed in areas where the transverse wind loads exceed the allowable loads shown in Tables 1, 2 and 3.

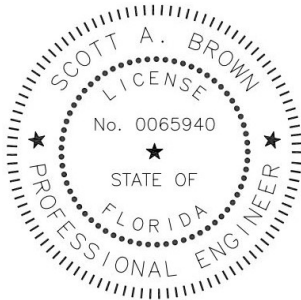
9.4 Doors listed in this report do not address the requirements of the High Velocity Hurricane Zone (HVHZ).

10. Identification

10.1 Each Raynor Garage Door covered by this report shall be labeled with the manufacturer’s name, drawing number, Florida approval number for field identification.

11. Further Information

11.2 Scott A. Brown P.E. #65940 does not have, nor intend to acquire a financial interest in Raynor Mfg. or any other company manufacturing or distributing products for which this report is being issued; Scott A. Brown P.E. #65940 is not controlled by Raynor Mfg. or any other company manufacturing or distributing any portion of the product being tested, evaluated or approved by this report.



A handwritten signature in cursive script that reads "Scott Brown".

Digitally signed by Scott A
Brown
Date: 2024.10.18
11:23:25-05'00'

Scott A. Brown, P.E. Lic. No. 65940
Willett, Hofmann & Associates, Inc.
809 E. 2nd Street, Dixon, IL 61021
FBPE CA Lic. No. 35415
Structural Adequacy for Wind Load

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